Small Business Innovation Research/Small Business Tech Transfer

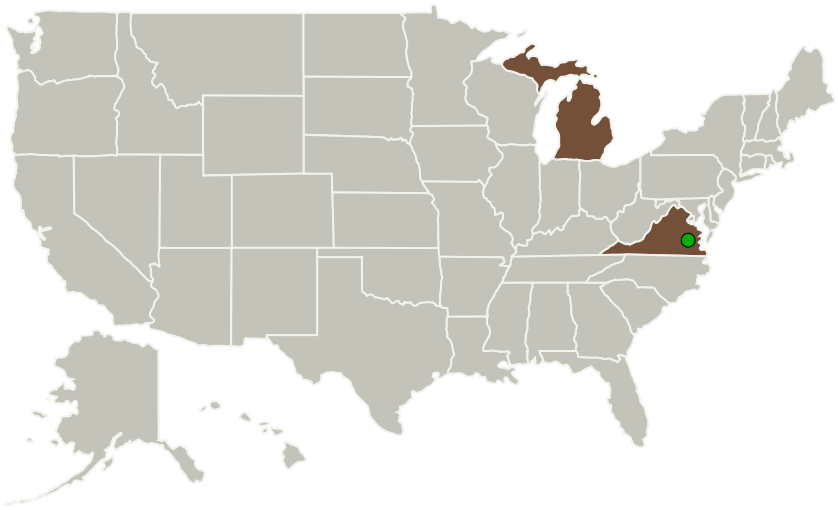
Speed Sensor for Planetary EDL: "SPRY", Phase I

Completed Technology Project (2016 - 2016)

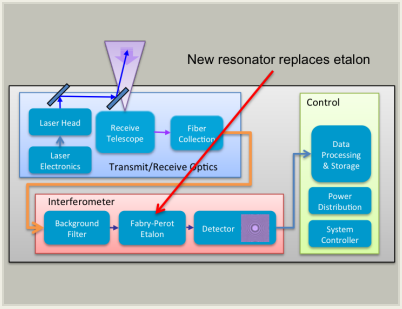
Project Introduction

The goal of this Phase I and Phase II efforts is to develop a micro atmospheric data sensor suitable for planetary entry, descent, and landing (EDL) maneuvers, in response to NASA's S4.01 Planetary Entry Descent and Landing. Michigan Aerospace Corporation (MAC) is proposing to develop a compact, rugged optical atmospheric data sensor capable of measuring free stream velocity during EDL; this sensor will use a novel microresonator approach as part of its light processing path, allowing unprecedented compactness and ruggedness. Phase I will entail the design and preliminary demonstration of the concept. A prototype atmospheric data sensor will be fabricated in Phase II and tested using a calibrated flow field.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
Michigan Aerospace Corporation	Lead Organization	Industry	Ann Arbor, Michigan
Langley Research Center(LaRC)	Supporting Organization	NASA Center	Hampton, Virginia



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Primary U.S. Work Locations	
Michigan	Virginia

Project Transitions

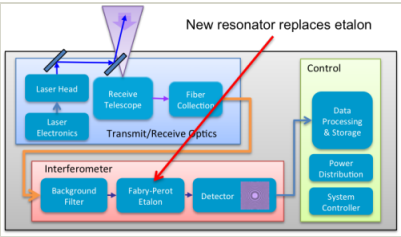
June 2016: Project Start

December 2016: Closed out

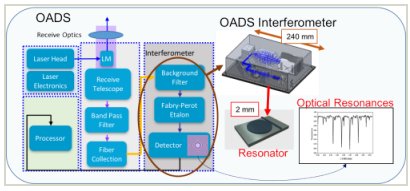
Closeout Documentation:

- Final Summary Chart*(https://techport.nasa.gov/file/139970)*

Images



Briefing Chart Image
Speed Sensor for Planetary EDL: "SPRY", Phase I *(https://techport.nasa.gov/image/133143)*



Final Summary Chart Image
Speed Sensor for Planetary EDL: "SPRY", Phase I Project Image *(https://techport.nasa.gov/image/127461)*

Organizational Responsibility

Responsible Mission Directorate:
Space Technology Mission Directorate (STMD)

Lead Organization:
Michigan Aerospace Corporation

Responsible Program:
Small Business Innovation Research/Small Business Tech Transfer

Project Management

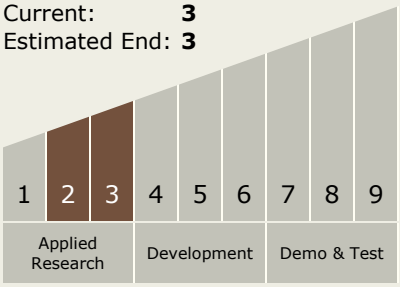
Program Director:
Jason L Kessler

Program Manager:
Carlos Torrez

Principal Investigator:
Dominique Fourguette

Technology Maturity (TRL)

Start: **2**
Current: **3**
Estimated End: **3**



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Technology Areas

Primary:

- TX09 Entry, Descent, and Landing
  - TX09.4 Vehicle Systems
    - TX09.4.4 Atmosphere and Surface Characterization

Target Destinations

Earth, The Moon, Others Inside the Solar System, Outside the Solar System, The Sun, Mars